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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,663	10/30/2007	Eduardo Diaz Del Rio Perez	576391-2003	3780

7590 04/29/2010  
David M. McConoughey, Esq.  
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New York, NY 10116-8477

EXAMINER
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VONCH, JEFFREY A

ART UNIT	PAPER NUMBER
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1783

MAIL DATE	DELIVERY MODE
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04/29/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/553,663	<b>Applicant(s)</b> DIAZ DEL RIO PEREZ, EDUARDO	
	<b>Examiner</b> Jeff A. Vonch	<b>Art Unit</b> 1783	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☒ Claim(s) 1-15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's amendments filed January 29<sup>th</sup>, 2010 have been entered.
2. The objections to claims 1-15 have been maintained.
3. The Section 112 Rejections of claims 1-15 have been maintained.
4. The Section 103 Rejections of claims 1-2, 4-6, 8-10, and 12-15 over Gass (U.S. Patent No. 5,000,336) have been maintained.
5. The Section 103 Rejections of claims 1-2, 4-6, and 12-15 over Gass (U.S. Patent No. 5,000,336) in view of Alhamad (U.S. Patent No. 5,794,706) have been maintained.
6. The Section 103 Rejections of claims 3, 7, and 11 over Gass (U.S. Patent No. 5,000,336) in view of Alhamad (U.S. Patent No. 5,794,706) further in view of Mondt et al. (U.S. Patent No. 5,246,130) have been maintained.
7. The Section 103 Rejections of claims 4, 8, and 12-15 over Gass (U.S. Patent No. 5,000,336) in view of Alhamad (U.S. Patent No. 5,794,706) further in view of Szego (U.S. Patent No. 3,356,256) have been maintained.

### ***Response to Arguments***

8. Regarding Applicant's response to the objection, stating that temperature is not part of the unit of measure, Applicant quotes "*thermal conductance* is the quantity of heat that passes in unit time through a plate of *particular area and thickness* when its opposite faces differ in temperature by one kelvin." (italics added by Applicant for emphasis). Claim 1 does not signal

Art Unit: 1783

that the faces of an apertured sheet material has faces that “differ in temperature by one kelvin” or similar unit of measurement.

9. Furthermore that same webpage states "Thermal conductivity is measured in watts per kelvin per meter" where a watt has the units of Joules per second. This would mean that the required units of thermal conductivity need to be the following: unit of heat per unit of temperature per unit of time per unit of length. Applicant's units do not follow this requirement and the objections are maintained.

10. Regarding Applicant's response to the Section 112 Rejections, Applicant argues that the construction of the claim language is discussed under the obviousness rejection. It is not addressed how a unit of area/unit of volume could be directly compared to a unit of area. It is not clear how the Applicant is performing the calculations to obtain a feature like this. The contact surface as defined in the specification (page 7, lines 18-20) refers to the area of the container that is in contact with the fluids both vapor and liquid in the container.

11. Furthermore, Applicant responds with the definition of unit volume accorded by Wikipedia. This however does nothing to answer the requests for specificity by the Examiner.

12. Regarding the response to the Section 103 Rejections, Applicant argues that Gass does not teach a ratio of surface area per unit volume and contact surface area of the fluid material. Gass teaches that it must be much larger in comparison to the volume of the container and its fluids. It should be noted that the volume of the container and its fluids and the surface area of a container and its fluids are result effective variables. As the container/fluid volume increases,

Art Unit: 1783

the container/fluid surface area increases. Absent unexpected results, it would have been obvious to one of ordinary skill in the art at the time of invention to optimize the container surface area (with respect to the surface area per unit volume of the explosion-inhibiting article) since it has been held that “where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.” *In re Aller*, 220 F.2d 454, 105 USPQ 233 (CCPA 1955). One of ordinary skill in the art would have been motivated to optimize the container/fluid surface area with respect to the surface area per unit volume of the explosion-inhibiting article in order to more quickly and effectively dissipate heat over a substantial contact area (col. 5, lines 51-60).

13. Furthermore, there is nothing in Applicant’s specification that gives any indication as to how the article obtains the surface area per unit volume, only disclosing the thickness (page 3, lines 16-21). Gass discloses a thickness within the range given so it should inherently have the ratio claimed by Applicant.

14. Regarding Applicant’s argument that Alhamad does not provide relevant disclosure, Alhamad adds an actual surface area to per unit volume ratio for the sheet, whereas Gass makes obvious the remainder of the relationship (using the surface area per unit volume to construct a surface that has a high surface area in proportion to the container size/amount of fluids, which is shown to be a result effective variable with surface area of the container/fluids). One of ordinary skill in the art would use the idea of constructing an article using the article area/volume property of the Alhamad and then using it based on the idea of Gass to increase the surface area of the container in relation to the area of the article.

Art Unit: 1783

15. Regarding Applicant's first assertion that the Office has been unable to point to any derivation of the relationship claimed in the prior art, the above explanation shows that to be untrue. In addition, the exact relationship is difficult to ascertain as Applicant does not disclose how 2,000 times is calculated using a surface area to unit volume and comparing it to surface area.

16. Regarding Applicant's second assertion that the Office is not using the correct, relevant size surface area, a correct, relevant surface area is never disclosed by Applicant. One could also imagine a normal sized vessel with the explosion-inhibiting article having 2,000 times the surface area (per unit volume) using Gass's teaching above to increase the surface area of the sheet in contact with the fluid (col. 5, lines 51-60).

17. Regarding Applicant's third assertion that the Office's assertion requires the creation of a hypothetical, the relationship is based on an intended use since a tank/vessel is never claimed in combination with the article. Therefore, a hypothetical is required to ascertain the scope of the claimed subject matter.

18. Regarding Applicant's arguments that resistance to compression is not relatable to compressive yield, compressive yield (strength) is not commonly measured in as a percentage but rather in units of pressure so Examiner had to turn to the Applicant's definition in the specification for interpretation. Applicant's specification defines compressive yield as "resistance to compaction (i.e. permanent deformation under compressive load)" (page 8, lines 7-9) so anything that is stiff and strongly resists crushing and compression (Szego, col. 1, lines 53-59) or prevents it (col. 5, lines 44-55) should inherently give 10 percent compressive yield or,

Art Unit: 1783

alternately, would make it obvious to one of ordinary skill in the art to define a value for optimization.

***Conclusion***

19. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

20. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff A. Vonch whose telephone number is (571) 270-1134. The examiner can normally be reached on Monday to Thursday 8:30-6:00 EST.

22. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

23. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

Art Unit: 1783

applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/  
Supervisory Patent Examiner, Art Unit 1783

/J. A. V./  
Jeff A. Vonch  
Patent Examiner, Art Unit 1783  
April 16<sup>th</sup>, 2010